

*YAKUBOVICH, A. YA.*

11.1135  
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11.2131

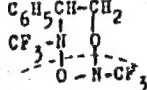
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5/029/62/142/003/017/027  
2106/2115

AUTHORS: Makarov, S. P., Shpanskiy, V. A., Ginsburg, V. A.,  
Shegoklikhin, A. L., Pilatov, A. S., Martynova, L. L.,  
Pavlovskaya, I. V., Golovannova, A. P., and Yakubovich, A. Ya.

TITLE: Reactions of polyfluorinated nitroso-alkanes with unsaturated compounds

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 142, no. 3, 1962, 596 - 599

TEXT: Trifluoronitroso methane is used as an example of some reactions of polyfluorinated nitroso-alkanes with unsaturated compounds. These addition reactions take place easily (in an autoclave at -70 to 0°C). Monomers and polymers containing 1 mole of nitroso compound per olefin mole, form. Styrene and trifluoronitroso methane also form a compound with the molar ratio 1 : 2 which decomposes into 1 mole of nitroso compound, formaldehyde, and the corresponding imine when heated to 70 - 80°C. Therefore it has the structure  $C_6H_5CH=CH_2$ . Trifluoronitroso methane adds to diphenyl



Card (1/5)

C/620/62/13/003/017/027  
B106/B110

Reactions of polyfluorinated...

ketene even more easily under the formation of  $(C_6H_5)_2C=CO$  which  

$$\begin{array}{c} | \\ O-NCF_3 \end{array}$$

decomposes when heated to 300°C mainly forming trifluoromethyl isocyanate  
 (Bp. 33°C, yield 35%) and traces of trifluoronitroso methane. The latter  
 also reacts with  $R_2C=CHX$  alkynes ( $X = Cl, Br; R = CF_3, CF_2Cl, CFCl_2$ ) at  
 room temperature in an autoclave.  $O-NCF_3$  forms on heating trifluoro-

$HOOCN-NCOOR$   
 nitroso methane with azodicarbonic acid enters to 100 - 150°C under  
 pressure. Diazomethane and trifluoronitroso methane react at -70°C to  
 give a polymeric nitron  $[CF_3N(O)CH_2]_n$  under nitrogen separation.

Phosphazenes and trifluoronitroso methane react violently at -70°C  
 following the scheme  $(C_6H_5)_3P=N-N=CH_2 + CF_3NO \rightarrow CH_2O$

+  $[ (C_6H_5)_3P=N-N=NCF_3 ] \xrightarrow{-N_2} (C_6H_5)_3P=NCF_3$ . The product of this reaction  
 also forms from triphenyl phosphine and trifluoromethyl azide under the  
 same conditions. Trifluoronitroso methane and methyl isocyanide react

Card 2/6

3/620/62/142/003/017/027  
B106/B110

Reactions of polyfluorinated...

vigorously when heated to 25°C in an autoclave to form  $\text{O-NCF}_2$ , which  
 $\text{CH}_3\text{N-C-C-NCH}_3$

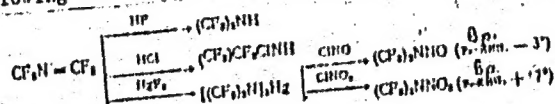
decomposes into trifluorinated dimethyl carbodiimide and methyl isocyanate when heated to 350 - 400°C in vacuo. These reactions demonstrate the great tendency of the N-O groups of trifluoronitroso methane to addition reactions with nucleophilic and electrophilic compounds. For comparison, some additions similar to the above reactions were conducted with polyfluorinated azomethines:  $\text{CF}_3\text{N-CF}_2$  (Bp. -33°C) and  $\text{CF}_3\text{N-CFCl}$  (Bp. -50°C). In all cases, the additivity of the C-N groups of these compounds was much lower. On reaction of  $\text{CF}_3\text{N-CF}_2$  with diphenyl ketene (autoclaved for 12 hrs at 180°C), not addition, but dimerization of the initial substance took place. The dimer also formed in almost quantitative yields by reaction between  $\text{CF}_3\text{N-CF}_2$  and pyridine at -70 - 50°C. With aniline, the dimer converts into the anilide of the monomer, when subjected to pyrolysis (>500°C) it dissociates into the monomer ( $\text{CF}_3\text{N-CF}_2$ ). Unlike the polyfluorinated azomethines above, difluoro formimine easily

Card 3/6

5/020/62/142, '003/017/027  
B106/B110

Reactions of polyfluorinated...

reacts with diphenyl ketene to form the adduct  $(C_6H_5)_2CCO \cdot 2CF_2NH$ .  
Addition reactions with hydrogen fluoride, hydrogen chloride, and mercuric fluoride following the schemes



are very characteristic for the polyfluorinated azoethines in question. The tendency of polyfluorinated substances with double bonds to addition reactions with olefins therefore decreases as follows:  $N=O > N=N > N=C$ . Table 1 shows the physical constants of the compounds synthesized for the first time. There are 1 table and 12 references: 4 Soviet and 8 non-Soviet. The three most recent references to English-language publications read as follows: E. E. Griffin, R. N. Hazeldine, Proc. Chem. Soc., 1959, 369; 1960, 1151 - 1155; C. E. Griffin, R. N. Hazeldine, J. Chem. Soc., 1960, 1398; J. Crawford, J. Polym. Sci., 42, No. 145, 261 (1960).

Card 4/6

Reactions of polyfluorinated...

S/020/62/142/003/017/027 /  
B106/B110

PRESENTED: June 1, 1961, by M. I. Kabachnik, Academician

SUBMITTED: May 30, 1961

Table 1. Compounds synthesized for the first time.

Legend: (a) Compound; (b) bp. (Fp.), °C/mm; (c) determined, %;  
(d) calculated, %; (e) Fp. & Non-distillable yellow oil; & molecular  
weight (in acetic acid) : determined 500, calculated for the pentamer 565.

Card 5/8

SMIRNOV, K. M.; GINSBURG, V. A.; YAKUBOVICH, A. Ya.

Reaction of fluoroacetylene with mercury salts. Zhur. VKhO 8  
no. 2:231-232 '63. (MIRA 16:4)

(Acetylene) (Mercury salts)

YAKUBOVICH, A.Ya.; SHVETSOV, N.I.; LEBEDEVA, I.V.; YAKUBOVICH, V.S.

New method of synthesis of polyphosphonitriles. Zhur.neorg.khim.  
8 no.2:534 F '63. (MIRA 16:5)

1. Fiziko-khimicheskiy institut imeni L.Ya.Karpova.  
(Phosphonitrile chloride)

L 17423-63

EPR/EWP(J)/EPF(c)/EWT(m)/EDS ASD Pa-1/Pe-4/Pr-4 RM/

HW/MAY

9/6678/51/668/608/1831/1838

ACCESSION NR: AP3004344

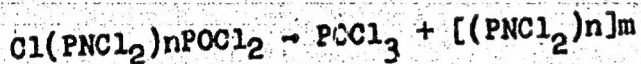
AUTHORS: Yakubovich, A. Ya.; Shvetsov, N. I.; Lebedeva, I. V.; Yakubovich, V. S.

TITLE: New methods of polyphosphonitrile synthesis 71

SOURCE: Zhurnal neorganicheskoy khimii, v. 8, no. 8, 1963, 1831-1838

TOPIC TAGS: polyphosphonitrile

ABSTRACT: A new method for synthesizing polyphosphonitrile chlorides has been proposed. Method is based on thermal cracking of the phosphorus oxychloride from the polychloropolyphosphazinephosphoxydichlorides according to the formula:



The above reaction also occurs with a number substituted phosphoxydichlorides. A detailed description of 11 such reactions is given. A mono-oxy derivative  $(\text{P}_3\text{N}_2\text{Cl}_6\text{O}_2\text{H})_3$  was obtained by a careful hydrolysis of pentachlorodiphosphazine-N-phosphoxydichloride. When heated, this compound polycondensates and forms HCl and an oxygen containing phosphonitrile polymer. Orig. art. has: 1 graph

Card 1/2

L 17423-63

ACCESSION NR: AP3004344

and 17 formulas.

ASSOCIATION: none

SUBMITTED: 10Sep62

DATE ACQ: 21Aug63

ENCL: 00

SUB CODE: CH

NO REF SOV: 001

OTHER: 010

Card 2/2

ZAYTSEVA, Ye. L.; BRAZ, G. I.; YAKUBOVICH, A. Ya.; BAZOV, V. P.

Syntheses in the series of 1,3,5-triazine. Part 2: Preparation of mixed 2,4,6-trialkyl-1,3,5-triazines from imino ethers.  
Zhur. ob. khim. 33 no.1:199-202 '63. (MIRA 16:1)

1. Fiziko-khimicheskiy institut imeni L. Ya. Karpova.

(Triazine) (Ethers)

BRAZ, G.I.; MYASNIKOVA, G.V.; YAKUBOVICH, A.Ya.; BAZOV, V.P.;  
SAKODYNSKIY, K.I.

Simultaneous trimerization of acetonitrile and trichloroacetonitrile.  
Zhur.ob.khim. 33 no.6:1939-1941 Jo '63. (MIRA 16:7)

1. Fiziko-khimicheskiy institut imeni L.Ya.Karpova.  
(Acetonitrile) (Polymerization)

SHVETSOV, N.I.; NURIDZHANYAN, K.A.; YAKUBOVICH, A.Ya.; SUKHOV, F.F.

Chemistry of phosphazenes. Derivatives of 2,4,6,6-tetra-*N*-di-  
methylaminocyclotriphosphonitrile. Zhur.ob.khim. 33 no.12:3936-  
3941 D '63. (MIRA 17:3)

1. Fiziko-khimicheskiy institut imeni Karpova.

44563

S/020/63/148/001/024/032  
B106/B186

53760

AUTHORS: Motsarev, G. V., Yakubovich, A. Ya., Rozenberg, V. R.

TITLE: Production and properties of hexachloro cyclohexyl chlorosilanes

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 148, no. 1, 1963, 116-117

TEXT: The addition of chlorine to phenyl trichlorosilane (I) and phenyl methyl dichlorosilane (II) was studied for the first time. Under the action of chlorine at 0-2°C in diffuse daylight, both compounds yield exclusively the addition products hexachloro cyclohexyl trichlorosilane (III) (28.9% yield) and hexachloro cyclohexyl(methyl) dichlorosilane (IV) (78.4% yield). Ultraviolet light considerably increases yield and reaction rate. The yield of addition products decreases with increasing reaction temperature, and substitution occurs. Substitution occurs exclusively at 120°C (compound I) and 50°C (compound II). Additive chlorination of aromatic chlorosilanes, especially of compound II, proceeds much more readily than chlorination of benzene. This is explained by the fact that the electrophilic silyl chloride group disturbs the symmetry of the  $\pi$ -electron cloud of the benzene ring, and

Card 1/3

Production and properties of ...

S/020/63/148/001/024/032  
B106/B1E6

deactivates the phenyl radical for substitution reactions. Compound II, the silicon atom of which is less electrophilic, undergoes additive chlorination more readily than compound I. Therefore, there is a relationship between the electrophilic effect of the substituents and the rate of additive chlorination of substituted aromatic compounds. Compounds III and IV are colorless, viscous liquids which fume slightly in air, are soluble in organic solvents, and crystallize when standing for a long time (m.p. 90-93°C). Their wide boiling ranges (Table 1) are due to the existence of stereoisomeric mixtures. Under the action of water, they are hydrolyzed to siloxanes; in lyes, the hexachloro cyclohexyl radical is split off, and goes over into trichlorobenzene with separation of hydrogen chloride. III and IV react with ethanol to give hexachloro cyclohexyl ethoxy silanes (Table 1). There is 1 table.

PRESENTED: April 12, 1962, by I. L. Knunyants, Academician

SUBMITTED: April 4, 1962

Card 2/3

GINSBURG, V.A.; VLASOVA, Ye.S.; VASIL'YEVA, M.N.; MIRZABEKOVA, N.S.;  
MAKAROV, S.P.; SHCHEKOTIKHIN, A.I.; YAKUBOVICH, A.Ya.

Photoreaction of hexafluoroazomethane with unsaturated compounds.  
Dokl.AN SSSR 149 no.1:97-99 Mr '63. (MIRA 16:2)

1. Predstavleno akademikom M.I.Kabachnikom.  
(Azomethane) (Photochemistry) (Unsaturated compounds)

GINSBURG, V. A.; DUBOV, S.S.; MEDVEDEV, A.N.; MARTYNOVA, L.L.; TETEL'BAUM, B.I.;  
VASIL'YEVA, M.N.; YAKUBOVICH, A.Ya.

Structure of the inclusion complexes of trifluoronitrosomethane with  
unsaturated compounds and the mechanism of their formation. Dokl.  
AN SSSR 152 no.5:1104-1107 O '63. (MIRA 16:12)

1. Predstavleno akademikom I.L.Knunyantsem.

ACCESSION NR: AP4037281

S/0190/64/006/005/0838/0842

AUTHORS: Yakubovich, A. Ya.; Rozantsev, G. G.; Braz, G. I.; Bazov, V. P.

TITLE: Fluorinated polybenzimidazoles

SOURCE: Vy\*sokomolekulyarny\*ye soyedineniya, v. 6, no. 5, 1964, 838-842

TOPIC TAGS: polybenzimidazole, fluorinated polybenzimidazole, diaminobenzidine perfluoroglutarate polycondensation, diaminobenzidine diphenyl perfluoroglutarate, polyperfluorotrimethylenedibenzimidazole

ABSTRACT: Low-molecular poly-2,2'-(perfluorotrimethylene)-5,5'-dibenzimidazole (PPD) was synthesized by melting 0.5 gm 3,3'-diaminobenzidine with 0.92 gm diphenylperfluoroglutarate at 180C in an atmosphere of argon. Within 30 minutes the temperature was raised to 190C, and the heating was continued for another 30 minutes at 1.5 mm pressure. After grinding the reaction mass to a powder the heating was continued for 3 hours at the same pressure, with the temperature gradually increased to 220C. This procedure yielded polymer I. Polymer II was obtained by allowing the process to run the last three hours at 190C and 0.3 mm pressure. When the last stage was continued for 5 hours at 190C and 0.04 pressure,

Card 1/2

ACCESSION NR: AP4037281

the resulting compound was labeled polymer III. The yield of polymers I, II, and III averaged 59%. They were dissolved in m-cresol from which they were precipitated by ether. The products were then analyzed and studied by infrared spectroscopy. Specific viscosities of 0.2% solutions of polymers I and III in cresol were found to be 0.035 and 0.055 respectively, while polymer II did not show any noticeable viscosity. Heating at 220-230C in an atmosphere of argon brought about the decomposition of the PPD polymer, with the liberation of fluorine. Orig. art. has: 2 tables, 2 formulas, and 1 chart.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physicochemical Institute)

SUBMITTED: 03Jun63

DATE ACQ: 09Jun64

ENCL: 00

SUB CODE: MT

NO REF SOV: 003

OTHER: 004

Card 2/2

KARAPETYAN, S.S.; YAKUBOVICH, A.Ya.; KNUNYANTS, I.L.

Polyesters and mixed polyesters of 2,2-bis-(4-hydroxyphenyl) hexafluoropropane and aromatic dicarboxylic acids. *Vysokom.sped.* 6 no. 9:1550-1554 S '64. (MIRA 17:10)

CHELOBOV, F.N.; DUBOV, S.S.; TIKHOMIROV, M.V.; GITEL', P.O.; YAKUBOVICH, A.Ya.

Ionization and dissociation during an electron impact of  $\alpha$ -fluoro  
nitriles with a growing alkyl chain. Zhur.ob.khim. 34 no.2:571-575  
F '64. (MIRA 17:3)

11355-65 L.A. (M), LPT (C), LPT (C) / PC-4/PT-4/PS-4/PA-4 / SD(M)-3/RPL  
 5,0190/64/000/100/1550/1554  
 ACCESSION NR: AP4045418 MM/RM

AUTHOR: Karapetyan, S. S. ; Yakubovich, A. Ya. ; Kravtsov, I. L.

TITLE: Polyesters and mixed polyesters of 2,2-bis-(4-hydroxyphenyl)-hexafluoropropane and aromatic dicarboxylic acids

SOURCE: Vysokomolekulyarnyye soedineniya, v. 6, no. 9, 1964, 1550-1554

TOPIC TAGS: polyester, mixed polyester, copolymerization, dicarboxylic acid, aromatic dicarboxylic acid, hydroxyphenylhexafluoropropane, polyester mechanical property

ABSTRACT: The homo- or mixed esters of 2,2-bis-(4-hydroxyphenyl) hexafluoropropane with terephthalic acid (softening temp. 261C, destruction temp. 374C; impact toughness 10.8 kg x cm/cm<sup>2</sup>), 2,2-bis-(4-hydroxyphenyl) propane and 2,2-bis-(4-hydroxyphenyl) hexafluoropropane with terephthalic acid (soft. temp. 238-241C, destr. temp. 375C, impact toughness 14.2), 2,2-bis-(4-hydroxyphenyl) hexafluoropropane with isophthalic and terephthalic acids (soft. temp 220-225C, destr. temp. 378C, impact toughness 7.1), both propanes with both acids (soft. temp. 181C, destr. temp. 377C, impact toughness 4.8), 2,2-bis-(4-hydroxyphenyl)propane with terephthalic acid (soft. temp. 225-226C, destr. temps. 370C, impact toughness 12.8), and 2,2-bis-(4-hydroxyphenyl)propane with both

Card 1/2

L 11355-65

ACCESSION NR: AP4045418

acids (soft. temp. 206-209C, destr. temp. 377C, impact toughness  $>10$ ) were prepared by reacting equimolar aqueous solutions of the diphenols and NaOH with solutions of the dichloroanhydrides of the acids in xylene, toluene or chloroform for 10 min. at room temperature. The esters are white powders which form amorphous light-to-dark brown transparent solids after fusing, pressing or casting under pressure. The softening temperature, determined with the use of an IFP device at 1 kG/mm<sup>2</sup> was found to rise to a maximum of 261C with an increase in molecular weight to  $3 \times 10^4$  and beyond. Orig. art. has: 3 figures and 1 table.

ASSOCIATION: None

SUBMITTED: 13Jul63

ENCL: 00

SUB CODE: OC, MT

NO REF SOV: 009

OTHER: 007

Card 2/2

L 18959-65 EWT(m)/EPF(c)/EPR/EMP(j) Pc-L/Pr-L/Ps-L RPI. WW/RM

ACCESSION NR: AP4049466

S/0079/64/034/011/3609/3610

AUTHOR: Bay, L.I., Yakubovich, A. Ya., Muler, L.I.

TITLE: Phosphorus-containing isocyanates. I. Synthesis of diisocyanates of methylphosphinic and phenylphosphinic acids

SOURCE: Zhurnal obshchey khimii, v. 34, no. 11, 1964, 3609-3610

TOPIC TAGS: diisocyanate synthesis, methylphosphinic acid, phenylphosphinic acid, isocyanate, phosphinic acid dichloroanhydride

ABSTRACT: Diisocyanates were prepared by adding 0.1 g-mol of the dichloroanhydride of phosphinic acid and 50 ml acetonitrile dropwise in dry nitrogen to a mixture of 150 ml acetonitrile and 0.22 g-mol silver cyanate heated to 60°C, raising the temperature to 80-85°C and stirring for 2 hours. The cooled mixture was filtered, the solvent evaporated, and the residue distilled in a vacuum. The diisocyanate of methylphosphinic acid ( $C_3H_3N_2O_3P$ ) had b.p. 71°C (2mm),  $n_D^{20}$  1.4680,  $d_4^{20}$  1.330; that of phenylphosphinic acid ( $C_8H_5N_2O_3P$ ) had b.p. 123°C (2mm),  $n_D^{20}$  1.5480,  $d_4^{20}$  1.3530. Using silver cyanate in place of potassium cyanate increased the yield from 15 to 30%. Rectification of the products was prevented by holding at 80-85°C for less than one hour. Methylphosphoric

Card 1/2

L 18959-65

ACCESSION NR: AP4049466

acid did not react in this manner.

ASSOCIATION: none

SUBMITTED: 22Aug63

ENCL: 00

SUB CODE: OC

NO REF SOV: 000

OTHER: 002

Card 2/2

BAY, L.I.; YAKUBOVICH, A.Ya.; MULER, L.I.

Synthesis of  $\alpha$ -substituted styrenes. Zhur. ob. khim. 34 no.11:  
3696-3697 N '64 (MIRA 18:1)

ZAYTSEVA, Ye.L.; YAKUBOVICH, A. Ya.; BRAZ, G.I.; BAZOV, V.P.

Esters of bisiminoedipic and -terephthalic acids. Zhur. ob.  
khim. 34 no.11:3709-3713 N '64 (MIRA 18:1)

1. Fiziko-khimicheskiy institut imeni L. Ya. Karpova.

L 20089-65 EWP(s)-2/ET(m)/EPF(u)/EPR/EWP(j)/T Pc-l/Pr-l/Ps-l/Pt-10 RPL/  
 ACCESSION NR: AP4049926 ASD(m)-3 WH/JW/ S/0020/64/159/003/0630/0631  
 RM

AUTHOR: Yakubovich, V. S.; Myasnikova, G. V.; Briz, G. I.;  
 Yakubovich, A. Ya.

TITLE: Synthesis of polybenzoxazole

SOURCE: AN SSSR. Doklady, v. 159, no. 3, 1964, 630-631

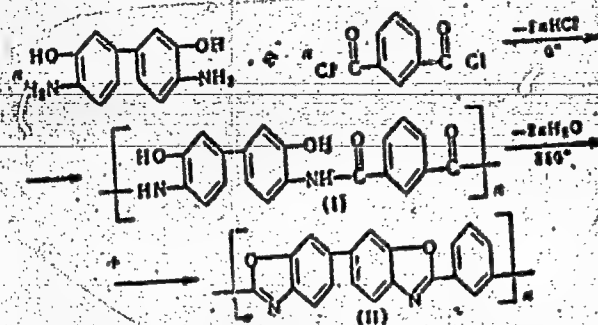
TOPIC TAGS: benzoxazole, polybenzoxazole synthesis, heat resistant  
 polymer, dihydroxybenzidine, isophthalyl dichloride, isophthalic acid,  
 terephthalic acid

ABSTRACT: To obtain polymers with high thermal stability, the authors  
 studied the condensation of 3,3'-dihydroxybenzidine with isophthalyl  
 dichloride. The process is a two-step reaction: 1) formation of a  
 poly(hydroxy amide) at 0C and 2) formation of a polybenzoxazole through  
 intramolecular ring closure at 350C. The authors synthesized  
 poly-2,2'-(m-phenylene)-6,6'-dibenzoxazole:

Card 1/3

L 20089-65

ACCESSION NR: AP4049926



This polybenzoxazole,  $(C_{20}H_{10}N_2O_2)_n$ , is soluble in concentrated  $H_2SO_4$  and insoluble in dimethyl sulfoxide, N-methylpyrrolidinone, and dimethylacetamide. The interesting fact observed was that solutions of (I) in  $H_2SO_4$  reveal a distinct fluorescence. After heat treatment in vacuum (up to  $500^\circ C$  and  $0.01$  mm Hg), (I) becomes insoluble in  $H_2SO_4$ . The above described synthesis was repeated with the use of the terephthalic dichloride resulting in the preparation of poly-(3,3'-

Card 2/3

L 20089-65

ACCESSION NR: AP4049926

dihydroxydiphenylterephthalamide). Orig. art. has: 1 figure.

ASSOCIATION: Fiziko khimicheskiy institut im. L. Ya. Karpova (Physico-chemical Institute)

SUBMITTED: 25Jun64

ENCL: 00

SUB CODE: OC, GC

NO REF SOV: 001

OTHER: 003

STD PRESS: 3158

Card 3/3

L 35430-65 EPF(c)/EPR/EWP(j)/...)/ENT(m) Pc-L/Pr-L/ps-L EPL RM/WW

ACCESSION NR: AP5006844

8/0063/65/010/001/0106/0107

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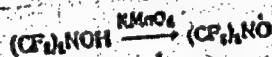
AUTHOR: Makarov, S. P.; Yakubovich, A. Ya; Dubov, S. S.; Medvedev, A. N.

TITLE: Stable free radical of nitrogen hexafluorodimethyloxide: its production, structure and properties

SOURCE: Vsesoyuznoye khimicheskoye obshchestvo. Zhurnal, v. 10, no. 1, 1965, 106-107

TOPIC TAGS: hexafluorodimethylhydroxylamine, nitrogen hexafluorodimethyloxide, stable free radical, potassium permanganate, acetic acid, electron paramagnetic resonance, hyperfine structure, infrared spectrum, ultraviolet spectrum, spin, paramagnetism, dimer, diamagnetic compound

ABSTRACT: The oxidation of hexafluorodimethylhydroxylamine by potassium permanganate in an acetic acid solution, or by other oxidizing agents (chlorine, fluorine, etc.) results in the free-radical molecule  $C_2F_6NO$

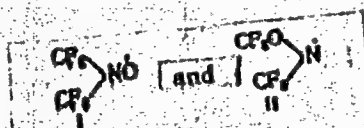


Card 1/3

L 35430-65

ACCESSION NR: AP5006844

This compound is a gas of violet-rose color with b.p.  $-2^{\circ}\text{C}$ , condensing into a dark-violet liquid which at  $-55$  to  $-70^{\circ}\text{C}$  solidifies into yellow-colored crystals. Its IR spectrum lacks absorption bands in the region characteristic of double bonds. These as well as other findings are presented to prove that this compound is indeed a stable free radical for which the following structure is the most probable



With respect to the EPR spectrum, the value of the g-factor ( $g = 2.0046$ ) established indicates the spin nature of the paramagnetism in the molecule. The curves of the hyperfine structure, observed for this compound in carbon tetrachloride and fluorinated oil, are given; the HFS spectrum was found to consist of nine equidistant lines with a corresponding intensity ratio. It is noteworthy that, when exposed to UV light, nitrogen hexafluorodimethyl oxide is dimerized into a diamagnetic compound which, on heating, readily dissolves and forms  $(\text{CF}_3)_2\text{N}^+\text{O}^-$ .

Card 2/3

L 35430-65

ACCESSION NR: AP5006844

Orig. art. has: 1 figure, 1 table.

ASSOCIATION: None

SUBMITTED: 26Oct64

ENCL: 00

HUB CODE: CC

NO REF SOV: 003

OTHER: 004

Card 3/3

YAKUBOVICH, A.Ya.; SERGEYEV, A.P.

$\alpha, \beta$ -difluoroacrylic acid and its derivatives. Zhur.  
ob. khim. 35 no.3:471-475 Mr '65. (MIRA 18.4)

MOTSAREV, G.V.; YAKUBOVICH, A.Ya.; PONOMARENKO, V.A.; SNEGOVA, A.D.;  
IVANOVA, T.M.

Substitution chlorination of phenyltrichlorosilane. Zhur. ob. khim.  
35 no.4:756-757 Ap '65. (MIRA 18:5)

YAKUBOVICH, A.Ya.; ZAYTSEVA, Ye.L.; BAZOV, V.P.

Synthesis of fluorinated aliphatic aromatic diketones. Zhur. ob.  
khim. 35 no.5:848-850 My '65. (MIRA 18:6)

1. Fiziko-khimicheskiy institut imeni Karpova, Moskva.

GINSBURG, V.A.; MARTYNOVA, L.I.; DOBOW, S.S.; TELEL'DAUM, B.I.;  
YAKUBOVICH, A.Ya.

Structure of adducts of trifluoronitroso methane with unsaturated  
compounds. Zhur. ob. khim. 35 no.5:851-857 My '65.

(MIRA 18:6)

NOTSAREV, G.V.; YAKUBOVICH, A.Ya.

Halogenation of aromatic silanes. Part 16: Certain features of  
the reaction of phenyltrichlorosilane with iodine chlorides.  
Zhur. ob. khim. 35 no.6:1056-1057 Je '65. (MIRA 18:6)

ENGLIN, M.A.; YAKUBOVICH, A.Ya.; MAKAROV, S.P.; NIKIFOROVA, T.Ya.;  
LYSENKO, V.V.; DUBOV, S.S.

Heterogeneous fluorination with elementary fluorine. Part 7:  
Fluorination of hydrochlorides of aliphatic amines. Zhur. ob.  
khim. 35 no.7:1167-1171 '65. (MIRA 18:8)

MOTSAREV, G.V.; YAKUBOVICH, A.Ya.; ROZENBERG, V.R.; FILIPPOV, M.T.;  
DZHAGATSPANYAN, R.V.; BARDENSHTEYN, S.B.; KOLBASOV, V.I.;  
ZETKIN, V.I.

Halogenation of aromatic silanes. Part 17: Addition of chlorine  
to phenyl-trichlorosilane. Preparation of hexachlorocyclohexyl-  
trichlorosilane and the mechanism of its formation. Zhur. ob.  
khim. 35 no.7:1178-1183 J1 '65. (MIRA 18:8)

ENGLIN, M.A.; MAKAROV, S.P.; DUBOV, S.S.; YAKUBOVICH, A.Ya.

Heterogeneous fluorination by elementary fluorine. Part 5:  
Fluorination of silver and potassium thiocyanates. Zhur. ob.  
khim. 35 no.8:1412-1415 Ag '65.

Heterogeneous fluorination by elementary fluorine. Part 6:  
Fluorination of cyanuric chloride. Ibid.:1416-1418

(MIRA 18:8)

GINSBURG, V.A.; MUDVIL'N, A.N.; LOMTINA, M.F.; FULOV, G.S.; YAKUBOVICH, A.Ye.

Electron transference in reaction of nitroso compounds. Part I:  
Mechanism of disproportionation of trifluoronitrosomethane. Zhur.  
ob. khim. 35 no.5:1418-1422 Ag '65. (MIRA 18:8)

L 52113-55 EFF(c)/EPR/EWP(j)/EWA(c)/EWT(m)/T Pc-L/Pr-L/Ps-L RPL WW/RM

ACCESSION NR: AP5015236

UR/02E6/65/000/009/0021/0021

AUTHORS: Yakubovich, A. Ya.; Ginsburg, V. A.; Muler, L. I.; Bay, L. I.; Popkova, G. I.

TITLE: A method for obtaining n-cyanostyrene, Class 12, No. 170490

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 9, 1965, 21

TOPIC TAGS: cyanostyrene, vinylbenzoic acid, amide, phosphorus pentoxide

ABSTRACT: This Author Certificate presents a method for obtaining n-cyanostyrene. To simplify the process and to broaden the selection of raw material, n-vinylbenzoic acid amide is dehydrated with phosphorus pentoxide while being warmed in a vacuum.

ASSOCIATION: Organizatsiya gosudarstvennogo komiteta khimicheskoy i neftyanoy promyshlennosti pri gosplane SSSR (Enterprise of the State Committee of the Chemical and Petroleum Industry at the Gosplan SSSR)

SUBMITTED: 09Apr63

ENCL: 00

SUB CODE: 00

NO REF SOV: 000

OTHER: 000

Card 1/1 MB

MAKAROV, S.P.; YAKUBOVICH, A.Ya.; HUBOV, S.S.; MELNIKOV, A.N.

Synthesis of hexafluorodimethylhydroxylamine and hexafluorodimethylnitrogen oxide. Dokl. AN SSSR 160 no.6:1319-1322 F 185.

(MIRA 18:2)

1. Submitted December 8, 1964.

YAKUBOVICH, A.Ya.; SERGEYEV, A.P.; BELYAYEVA, I.N.

Direct fluorovinylation. Dokl. AN SSSR 161 no.6:1362-1364. Ap '65.  
(MIRA 18:5)

1. Submitted October 26, 1964.

L 13622-66 EWT(m)/EWP(j)/T RPL WW/RM

ACC NR: AP6000987

SOURCE CODE: UR/0256/65/000/022/0060/0060

AUTHORS: Yakubovich, V. S.; Lebedeva, I. V.; Yakubovich, A. Ya.; Shvetsov, N. I.

ORG: none

TITLE: A method for obtaining polyphosphonitryl chlorides. Glass 39, No. 17612<sup>15</sup>  
 [announced by Scientific Research Physicochemical Institute im. L. Ya. Karpov  
 (Nauchno-issledovatel'skiy fiziko-khimicheskiy institut)]

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 22, 1955, 60

TOPIC TAGS: phosphorus compound, polymer, polycondensation

ABSTRACT: This Author Certificate presents a method for obtaining polyphosphonitryl chlorides based on phosphonitryl chlorides. To produce a thermally stable and uniform polymer of a high molecular weight, monohydroxy derivatives of polychlorophosphazine-phosphohydroxy dichlorides or their derivatives, such as alkoxy derivatives, are used as phosphonitryl chlorides. These substances are subjected to polycondensation.

SUB CODE: 07/

SUBM DATE: 25Feb63

UDO: 678.745.3173

Card 1/1 HW

L 15326-66 ENT(m)/ENP(j)/T/ETC(m)-6 WH/RM

ACC NR: AP6000990

(A)

SOURCE CODE: UR/0:86/65/000/022/0061/0061

AUTHORS: Yakubovich, V. S.; Lobadeva, I. V.; Yakubovich, A. Ya.; Shvetsov, N. I.

ORG: none

TITLE: A method for obtaining polyphosphonitrile chlorides. <sup>9</sup> Class 39, No. 176416  
/announced by Scientific Research Physico-Chemical Institute im. L. Ya. Karpov  
(Nauchno-issledovatel'skiy fiziko-khimicheskiy institut)/

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 22, 1961, 61

TOPIC TAGS: <sup>44/55</sup> polymer, polycondensation, organic phosphorus compound, phosphonitrile, monomer

ABSTRACT: This Author Certificate presents a method for obtaining polyphosphonitrile chlorides by polycondensation of phosphonitrile chloride monomers. To increase the variety of thermostable polymer, the monomers used are: chloromono- or poly(dichloro-phosphasen)-phosphooxide dichlorides or alkoxyl derivatives of the latter.

SUB CODE: 11/ SUBM DATE: 25Feb63

07/

Card 1/1

UDC: 678.745.3:73

MOTSAREV, G.V.; YAKUBOVICH, A.Ya.; PONOMARENKO, V.A.; SNEGova, A.D.;  
IVANOVA, T.M.

Substitution chlorination of phenyltrichlorosilane. Zhur.ob.khim.  
35 no.12:2167-2176 D '65. (MIRA 19:1)

1. Submitted July 8, 1964.

L 14545-66 EWT(m)/EWP(j)/T WM/JM/RM

ACC NR: AP6006313

SOURCE CODE: UR/0413/66/000/002/0027/0027

INVENTOR: Yakubovich, A. Ya.; Gitel', P. O.; Solovova, O. P.

CLASS: none

TITLE: Preparative method for fluoroaromatic cyclophosphonitrilates. Class 12, No. 177886

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 2, 1966, 27

TOPIC TAGS: phosphorus compound, nitrogen compound, fluorine compound, fluorinated organic compound

ABSTRACT: An Author Certificate has been issued for a preparative method for fluoroaromatic cyclophosphonitrilates. The method involves the reaction of sodium or potassium fluorophenolate with phosphonitrile chloride on heating in an inert solvent, such as tetrahydrofuran. [SM]

SUB CODE: 07/ SUBM DATE: 29Oct64/ ATD PRESS: 4197

Card

1/1

UDC: 547.558.1.07

I 17996-66 EWT(m)/EWP(1)/T/ETC(m)-6 WI/RM  
ACC NR AP6006981 (A) SOURCE CODE: UR/0190/66/008/002/0272/0277

AUTHOR: Braz, G. I.; Kardash, I. Ye.; Yakubovich, V. S.; Myasnikova, G. V.;  
Ardashnikov, A. Ya.; Oleynik, A. F.; Pravednikov, A. N.; Yakubovich, A. Ya.

ORG: Physical Chemistry Institute im. L. Ya. Karpov (Fiziko-khimicheskiy institut)

TITLE: Polybenzoxazoles: preparation and thermal degradation

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 2, 1966, 272-277

TOPIC TAGS: heat resistant polymer, polyoxamide, polybenzoxazole

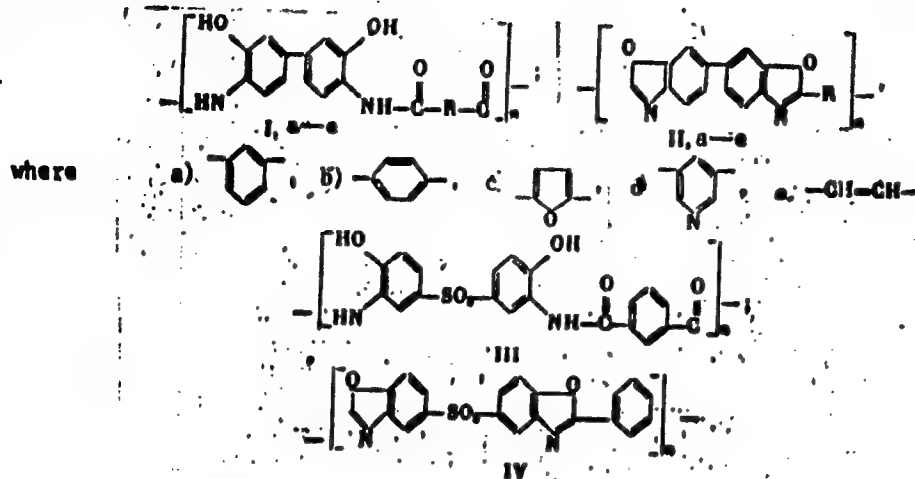
ABSTRACT: New high-thermal-stability polybenzoxazoles have been prepared which withstand temperatures up to 520—530C in vacuum. Polyoxamide intermediate products (I, a—e) were prepared by low-temperature (~ 0C) polycondensation of 3, 3'-dihydroxybenzidine with isophthaloyl, terephthaloyl, 2,5-furandicarbonyl, 3,5-pyridine-dicarbonyl, and fumaryl chlorides in dimethylacetamide. The polyoxamides were converted to the polybenzoxazoles (II, a—e) by thermal cyclodehydration. In addition, polycondensation of bis(4-hydroxy-3-aminophenyl) sulfone with isophthaloyl chloride produced polyoxamide II7 which was converted to polybenzoxazole IV.

Card 1/2

UDC: 541.64+678.01:54+678.67

L 17996-66

ACC NR: AP6006981



All the polyoxamides except III were colored materials, and all were soluble in conc.  $H_2SO_4$  and in some amide solvents. Polybenzoxasoles IIa and IIb are soluble in conc.  $H_2SO_4$  and insoluble in amide solvents, even in the presence of LiCl; II c-e are insoluble in conc.  $H_2SO_4$ , apparently owing to cross-linking. The poly-

Card 2/3

17996-66  
ACC NR: AP6006981

benzoxazoles show bright luminescence. Structures were confirmed by IR spectroscopy and elemental analyzing. Orig. art. has: 3 tables, 3 figures, and 4 formulas. [SH]

SUB CODE: 11/ SUBM DATE: 13Mar65/ ORIG REF: 001/ OTH REF: 009/ ATD PRESS: 4213

3/3

L 01039-67 EWT(m)/EWP(j)/T IJP(c) WW/JW/RM

ACC NRT AP6019549

(A)

SOURCE CODE: UR/0190/66/008/006/1137/1137

AUTHOR: Yakubovich, A. Ya.; Gitina, R. M.

ORG: none

TITLE: Preparation of fluorinated polyamides by low temperature polycondensation in amide solvents

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 6, 1966, 1137

TOPIC TAGS: polyamide, fluorinated organic compound, polycondensation, polymerization kinetics

ABSTRACT: Preparation of polyfluoroglutamides by reacting dichloroglutamides of the perfluoroglutaric acid with 3,3'-dioxymethylene in dimethylacetamide in dry argon atmosphere at  $-10^{\circ}$  to  $0^{\circ}\text{C}$  is reported. The viscosity of a solution of 0.5 g polymer in 100 ml dimethylfluoroamide at  $25^{\circ}\text{C}$  was:  $[\eta]_{\log} \sim 0.10-0.15$ . The structure of the polyfluoroglutamides was confirmed by IR spectroscopy. The success of this preparation procedure is explained in terms of the high rate of interaction of the dimethylacetamide solvent with both the starting dichloroanhydride of the perfluoroglutaric acid and the active terminal chloroanhydride groups of the macromolecules; the latter interaction leads to chain termination. In order to establish the ratio of the rates of growth and cleavage of the polymer molecules, subsequent syntheses were based on

Card 1/2

U DC: 541.64+678.675

L 01039-67

ACC NR: AP6019549

(1) the less reactive dichloroanhydrides of the iso- and terephthalic acids and (2) the dihydrazide of perfluoroglutaric acid instead of diamide. In this case, the polycondensation of an equimolar mixture of the starting components in N-methylpyrrolidone at 0°C led to the previously unreported high molecular fluorinated polyhydrazides: poly-1-isophthalyl-2-perfluoroglutarylhydrazide and poly-1-terephthalyl-2-perfluoroglutarylhydrazide. The viscosity of these polymers in dimethylformamide is:  $[\eta]_{\log} = 0.6-0.7$ .

SUB CODE: 07/ SUBM DATE: 01Feb66/ ORIG REF: 002/ OTH REF: 002

awm

Card 2/2

ACC NR: AP7011830

SOURCE CODE: UR/C079/66/036/010/1861/1861

AUTHOR: Filatova, I. M.; Zaytseva, Ye. L.; Yakubovich, A. Ya.

ORG: Physicochemical Institute imeni L. Ya. Karpov (Fiziko-khimicheskiy institut)

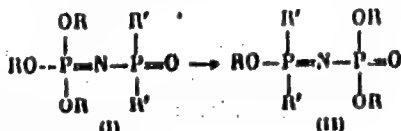
TITLE: New type of rearrangement of esters of the phosphazene series

SOURCE: Zhurnal obshchey khimii, v. 36, no. 10, 1966, 1861

TOPIC TAGS: ester, organic phosphorus compound, organic nitrogen compound, isomerization

SUB CODE: 07

ABSTRACT: The authors succeeded in observing a rearrangement for phosphazenes differing from the normal phosphazene rearrangement. It was proposed that the new rearrangement be called the phosphazenephosphoxide rearrangement. The isomerization



Card 1/2

UDC: 547.26.118

0132-

0425

ACC NR: AP7011830

was studied for an ester in which  $R = R' = C_2H_5$ . The isomerization could be conducted in both directions; in the preparation of compound (I) at temperatures above  $85^\circ$ , a mixture of the esters (I) and (II) was obtained. Orig. art. has: 1 formula.

[JPRS: 40,351]

Card 2/2

L 34129-66 ENT(m)/ENP(j)/T IJP(c) RM

ACC NR: AP6025541

SOURCE CODE: UR/0079/66/036/001/0163/0164

AUTHOR: Yakubovich, A. Ya.; Gitel', P. O.; Lagutina, Z. N.; Chelobov, F. N.

ORG: none

TITLE: Unusual adduct of trifluoronitrosomethane, tetrafluoroethylene, and phosphorus trichloride

SOURCE: Zhurnal obshchey khimii, v. 36, no. 1, 1966, 163-164

TOPIC TAGS: phosphorus chloride, chemical compound, molecular weight, solvent action, copolymerization, mass spectrum, spectrum analysis

ABSTRACT: The reaction of trifluoronitrosomethane with tetrafluoroethylene in the presence of phosphorus trichloride yielded an unusual three-component adduct with the composition  $C_2F_2 \cdot PCl_3 \cdot 2CF_3NO$ . This adduct is thermally stable and behaves as an individual compound, with a distinct boiling point and molecular weight; it dissolves in a number of organic solvents without change, does not react with oxidizing agents (halogens), and does not liberate molecular iodine from an acidified solution of KI. It reacts readily with nucleophilic agents such as water, alcohols, and amines. When the adduct is treated with methanol in the cold, a product with composition  $2CF_3NO \cdot C_2F_4 \cdot P(OCH_3)_3$  is isolated. The chemical properties of the adduct

Card 1/2

UDC: 547.89

L 34129-66

ACC NR: AP6025541

contradict the hypothesis of a radical mechanism of the copolymerization<sup>1</sup> of  $\text{CF}_3\text{NO}$  with  $\text{C}_2\text{F}_4$  in the presence of  $\text{PCl}_3$ , supporting the idea of a unique termination of the copolymerization, occurring at the very beginning of the process and accompanied by oxidation of trivalent phosphorus to the pentavalent form. A complete reaction mechanism and structure of the adduct are proposed. The chemical data on the structure of the adduct are confirmed by the results of mass spectral measurements. [JPRS: 35,998]

SUB CODE: 07, 20 / SUBM DATE: 08Jul65 / ORIG REF: 001 / OTH REF: 003

Card 2/2 *Lo*

YAKUBOVICH, A. Ya.; DZIDOMKO, L.M.; GINSBURG, V.A.

Fluorinated p-divinylbenzenes. Zmur. VKHO 10 nc. 6:705-706  
'65 (MIRA 19:1)

1. Submitted April 20, 1965.

L 00892-66 EWT(m)/EPF(c)/ENP(j)/EWA(c) RPL WW/JW/RM

ACCESSION NR: AP5020084

UR/0079/65/035/008/1418/1422  
546.161:547.122:547.414.7

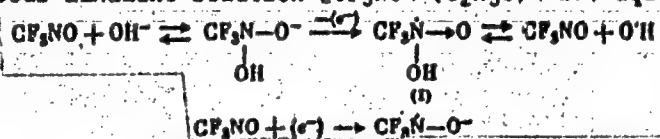
AUTHOR: Ginsburg, V. A.; Medvedev, A. N.; Lebedeva, M. F.; Dubov, S. S.; Yakubovich, A. Ya.

TITLE: Electron transfer in nitroso-compound reactions. I. Mechanism of trifluoronitrosomethane disproportionation

SOURCE: Zhurnal obshchey khimii, v. 35, no. 8, 1965, 1418-1422

TOPIC TAGS: electron transition, reaction mechanism, EPR spectrum, organic nitroso compound, aliphatic fluoronitro compound, methane

ABSTRACT: The mechanism of trifluoronitrosomethane disproportionation was studied in various organic and aqueous alkaline solvents in the temperature range from -120° to 20°C. A detailed examination of the EPR spectra indicated that in the absence of a reducing agent, the first stage of trifluoronitrosomethane disproportionation in an aqueous alkaline solution [ $\text{CF}_3\text{NO} + (\text{C}_2\text{H}_5\text{O}) + 20\%$  aqueous NaOH] is as follows

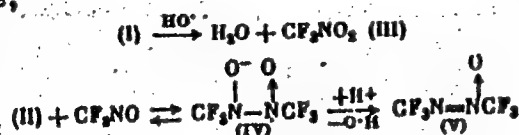


Card 1/3

L 00892-66

ACCESSION NR: AP5020084

In the next stage,



hexafluoroazoxymethane and trifluoronitromethane are formed in a reaction proceeding via the ion-radical mechanism. In the range from  $-120^\circ$  to room temperature, the EPR spectra indicate formation of a paramagnetic species at the interphase. Examination of the structure of the EPR spectra at  $-120^\circ\text{C}$  indicates formation of several types of free radicals. The hydroxy radicals, doublet with identical intensity and a splitting of  $\Delta H = 58$  Oe, recombine at  $-100^\circ\text{C}$ . At  $20^\circ\text{C}$  the ratio of intensities of the 6 hyperfine lines is close to 1:4:7:7:4:1 which corresponds to a radical incorporating a group  $\text{CF}_3\text{N}$ . Similarly, 6 hyperfine EPR lines but with-

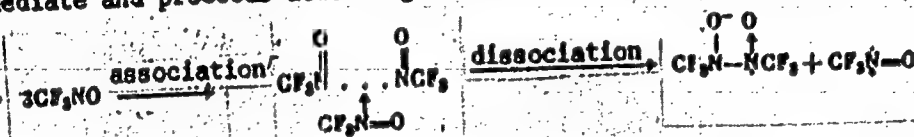
out doublet splitting were found using ethyl ether, chloroform, methyl chloride, and ethyl chloride as solvents. In the  $\text{CF}_3\text{NO} + \text{C}_2\text{H}_5\text{OH}$  system the doublet splitting

Card 2/3

L 00892-66

ACCESSION NR: AP5020084

( $\Delta H$ ) is equal to 3.3 Oe which is about 1.5 times greater than that found in the systems involving either toluene or hexane. No EPR spectrum corresponding to trifluoronitrosomethane was found using either carbon tetrachloride or trifluoroacetic acid as solvents. The transformation of trifluoronitrosomethane into the dimetric ion-radical (IV) in the absence of a reducing agent involves formation of a  $\pi$ -complex intermediate and proceeds according to the following mechanism



Orig. art. has: 4 figures, 3 formulas.

ASSOCIATION: none

SUBMITTED: 02Sep63

NO REF SOV: 007

ENCL: 00

OTHER: 004

SUB CODE: GC, OC

Card 3/3 *DP*

137-58-5-8800

137-58-5-8800

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 5, p 10 (USSR)

AUTHOR: Yakubovich, A. Ya.

TITLE: Ceramic Rakers for Herreshoff Furnaces (Keramicheskiye grebki dlya pechey Geresgofa)

PERIODICAL: Byul. Tsent. in-t inform. M-va tsvetn. metallurgii SSSR, 1957, Nr 1, pp 14-16

ABSTRACT: The building-materials laboratory of the Noril'sk Kombinat has developed a design and a manufacturing technology for the production of ceramic rakers employed in roasting furnaces. In their design the rakers are characterized by reinforced horizontal surface and a stronger blade. The chemical composition of the ceramic material is given together with the results of tests performed on the rakers.

A. Sh.

1. Furnaces--Operation 2. Ceramic materials--Applications

Card 1/1

137-58-6-11383

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 19 (USSR)

AUTHOR: Yakubovich, A.Ya.

TITLE: Fuel for Shaft Furnaces from By-products of the Coke-chemical Industry (Polucheniye topliva dlya shakhtnykh pechey iz otkhodov kokso-khimicheskogo proizvodstva)

PERIODICAL: Byul. tsvetn. metallurgii, 1957, Nr 11-12, pp 57-59

ABSTRACT: A discussion is offered of methods for briquetting coke breeze (K) (with tar and a mineral binder - Portland cement) and the results of production tests of the briquettes (B). The physical chemical properties of the K are presented, also the chemical composition and physical mechanical indices of the Portland cement, the characteristics of the tar, the composition of the mix going to the preparation of B by pressing with an organic binder, the results of tests of B strength, of physical chemical analysis of an average B specimen and of local (Noril'sk Kombinat) coke, and also of the composition of the mix, the physical mechanical indices and physical chemical analyses of B made with cement binder. It is shown that the briquetting of coke-chemical industry wastes may serve as a supplementary source of supply for industrial shaft furnaces. N.B.

Card 1/1

1. Coke--Properties 2. Fuels--Sources

ZAYTSEVA, Ye.L.; GITINA, R.M.; YAKUBOVICH, A.Ya.; BRAZ, G.I.; PETROVA, L.G.;  
BAZOV, V.P.

Synthesis and some properties of aminoperfluorocarboxylic acid  
esters. Zhur. ob. khim. 34 no.8:2816 Ag '64. (MIRA 17:9)

BRAZ, G.I.; MYASNIKOVA, B.V.; YAKUBOVICH, A.Ya.; BAZOV, V.P.

Syntheses in the 1,3,5-triazine series. Part 4: Carbethoxy-substituted triazines. Zhur. ob. khim. 34 no. 9: 2980-2987 (MIRA 17:11)  
S '64.

1. Fiziko-khimicheskiy institut imeni L.Ya. Karpova.

ZAYTSEVA, Ye.L.; YAKUBOVICH, A.Ya.; BRAZ, G.I.; BAZOV, V.P.

Synthesis in the 1,3,5-triazine series. Part 3: Benzoylhydroxyl-  
kyltriazines. Zhur. ob. khim. 34 no.9:2976-2979 S '64.

(MIRA 17:11)

1. Fiziko-khimicheskiy institut imeni L.Ya. Karpova.

ROZANTSEV, G.G.; DRAZ, G.I.; YAKUBOVICH, A.Ya.

Phenyl esters of perfluoroaliphatic mono and dicarboxylic acids.  
Zhur. ob. khim. 34 no.9:2974-2976 3 '64.

(MIRA 17:11)

1. Fiziko-khimicheskiy institut imeni L.Ya. Karpova.

BANIT, Feofan Gavrilovich; YAKUBOVICH, Boris Isayevich;  
VOLNYANSKIY, A.K., inzh., retsenzent; VYBORNIY,  
K.R., inzh., retsenzent; KRIZHANOVSKIY, G.S., inzh.,  
retsenzent; ZAYCHIKOVA, E.A., red.; GOL'BERG, T.M.,  
tekhn. red.

[Operating, repairing, and assembling equipment in building materials plants] Eksploatatsiya, remont i montazh oborudovaniia zavodov stroitel'nykh materialov. Moskva, Stroiizdat, 1964. 234 p. (MIRA 17:3)

YAKUBOVICH, B. M.

Pamyatka po ekspluatatsii trelevochnogo traktora KT-12 (Handbook on the use of the KT-12 skidding tractor, by) N. V. Kurin i B. M. Yakubovich. Moskva, Mashgiz, 1951.

142 p. illus.

Cataloged from abstract  
FB 520089

SO: N/5

743.281

.K96

1. YAKUBOVICH, D, Min. Eng.
2. USSR 600
4. Shaft Sinking
7. Sinking a shaft by the method of freezing, Mast. ugl., 1, No. 10, 1952.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

~~YAKUBOVICH~~

Aerosol spraying of paints and varnishes. Khim. nauka i prom. 2  
no.3:399 '57. (MLRA 10:8)

1. Tsentral'naya nauchno-issledovatel'skaya laboratoriya Vsesoyuz-  
noy kontory "Lakokraspokrytiya."  
(Paint)

YAKUBOVICH, D.S.; GROZINSKAYA, Z.P.; SANZHAROVSKIY, A.T.; ZUBOV, P.I.

Studying the physicomachanical properties of polyurethan coatings.  
Lakokras.mat.i ikh prim. no.6:32-37 '62. (MIRA 16:1)  
(Protective coatings--Testing) (Ethyl cartamate)

YAKUBOWICH, D.S.

Physical processes occurring during the drying and aging of paint  
coatings (from "Official Digest," 33 no.439, 1961). Lakokras.mat. i ikh  
prim. no.2:73-77 '63. (MIRA 16:4)  
(United States--Paint--Testing)

YAKUBOVICH, D.S.; SANZHAROVSKIY, A.T.; ZUBOV, P.I.

Studying the effect of the copper base structure on the adhesion  
to it of polyurethane coatings. Lakokras. mat. i ikh prim.  
no.5:30-33 '63. (MIRA 16:11)

L-25062-65 EWT(m)/EPF(c)/EWP(j) Pc-4/Pr-4 RM

S/0303/64/000/006/0024/0039

26  
B

ACCESSION NR: AP5002215

AUTHOR: Yakubovich, D. S.; Sanzharovskiy, A. T.; Zubov, P. I. Uvatov, A. V.

TITLE: A study of the wear resistance of polyurethan varnishes

SOURCE: Lakokrasochnyye materialy i ikh primeneniye, no. 6, 1964, 34-39

TOPIC TAGS: polyurethan varnish, polymer coating, varnish wear resistance, varnish hardening agent, triethanolamine, varnish aging, varnish abrasion, varnish mechanical property, infrared spectrum

ABSTRACT: The polyurethan varnish UR-19 intended for parquet floors was tested for wear resistance in comparison with the present commercial varnishes MCh-26 and PF-231. UR-19 was hardened with two compounds, a solution of tri-ethanolamine (TEA) in diethylene glycol or a solution of TEA in polyethylene glycol. This varnish and the 2 previous brands were sprayed on samples of oak and birch flooring and on copper foil in two coats totaling 70 or 80 microns in thickness. The UR-19 was allowed to dry for 5 days, the MCh-26 for 24 hours, and the PF-231 for 3 days at a temperature of 18-20C. Their physical properties were then tested and both the UR-19 varnishes proved superior as to elasticity, tensile strength, internal stress, and much higher rupture strength, cited as 180 and 230 kg/cm<sup>2</sup>.

Card 1/2

L 25062-65

ACCESSION NR: AP5002215

Abrasion resistance was tested by mechanical sanding. Aging was tested in a 50 x 50 x 60 cm chamber with two mercury-quartz lamps and a temperature of 40-45C. Wearing qualities were then tested in a Shopper AFGI abrasion apparatus and the wear measured by weighing the wooden samples before and after testing. A graph shows that abrasion of UR-19 was only 1 and 1.5 mg/cm<sup>2</sup> under a 0.5 kg load as against 4 mg for MCh-26; the PF-231 varnish peeled off at that point. Photochemical tests for aging showed that MCh-26 crumbled and peeled off the wood after 15 hours of abrasion, the PF-231 was worn through to the wood after 100 hours, but the UR-19 was hardly affected at all after 600 hours of abrasion. This fact was borne out by tests for hardness, elasticity, tensile strength and internal stress, made at set periods during the aging process. Infrared spectra were also recorded on all 3 types of floor varnish. Orig. art. has: 1 table, 3 formulas and 11 figures.

ASSOCIATION: None

SUBMITTED: 00

ENCL: 00

SUB CODE: HT

NO REF SOV: 024

OTHER: 002

Card 2/2

YAKUBOVICH, D.V., inzh.

"In"ektol", a new preparation (from "Ridy i metale niezalezne,"  
no.7, 1961). Shakht. stroi. 6 no.10:31-32 0 '62. (MIRA 15:9)  
(Poland—Cement)

KOROP, V.F., inzh.; YAKUBOVICH, D.V., inzh.

Plugging holes in rock salt at the Solotvin Mine. Shakht. stroi.  
8 no.6:24-26 Jo '64. (MIRA 17:10)

1. Solotvinskiy solerudnik (for Korop). 2. TsIIgorosusheniye (for Yakubovich).

41915

S/191/62/000/011/009/019  
B101/B186

15.8500

AUTHORS: Li, P. Z., Lukovenko, T. M., Yakubovich, E. I., Shagova, E. A., Markovich, V. E.

TITLE: Determination of the linear expansion coefficient of glass plastics

PERIODICAL: Plasticheskiye massy, no. 11, 1962, 36-40

TEXT: The linear expansion coefficient  $\alpha$  of a glass textolite from phenol formaldehyde resin reinforced by 65-70% glass fabric was determined in the temperature range 20-400°C. The resin combinations of 70% ЭА-6 (ED-6) epoxy resin and 30% phenol formaldehyde resin, phenol formaldehyde resin with polyvinyl butyral 1:1, or of phenol formaldehyde resin with furfural acetone resin 1:1, tested for comparison, showed no essential differences. The relative elongation  $\Delta l/l_0$  of glass textolites was not found to be a linear function of temperature.  $\alpha$  for 30% resin content lies near the  $\alpha$  for glass fiber ( $\sim 5 \cdot 10^{-6}/^\circ\text{C}$ ), it approaches that of iron for 45-55% resin content, and that of aluminum for 78% resin content, whereas  $\alpha$  for pure resin is  $\sim 80 \cdot 10^{-6}/^\circ\text{C}$ . Glass textolite shaped in

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Determination of the linear ...

S/191/62/000/011/009/019  
B101/B186

vacuo and molded glass textolite differ in that the  $\Delta l/l_0$ -versus-temperature curve for the latter shows irregularities above  $100^{\circ}\text{C}$ , due to after-hardening of the resin and loss of volatile components (the loss in weight being greater than with vacuum-shaped textolite). Therefore vacuum-shaped glass textolite offers higher heat resistance and mechanical strength. Glass textolite heated to  $300^{\circ}\text{C}$  and cooled in the exsiccator showed constant relative elongation owing to the elimination of moisture. The bending strength of vacuum-shaped glass textolite after heating to  $300^{\circ}\text{C}$  rose by 15% to  $2000 \text{ kg/cm}^2$ , at  $350^{\circ}\text{C}$  by 10% to  $1900 \text{ kg/cm}^2$ . The bending strength decreased above  $400^{\circ}\text{C}$ . There are 6 figures and 3 tables.

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L 58359-65 EPA(s)-2/ENT(m)/EPF(c)/EPR/ENP(j)/T/ENP(v) Pc-4/Pr-4/Ps-4/Pt-7

WW/RM

ACCESSION NR: AP5018035

UR/0191/65/000/007/0021/0022

678.643,42,5:678.06-419:677.521.01:536.495

AUTHOR: Lukovenko, T. M.; Gosteva, O. K. (Deceased); Shagova, E. A.; Yakubovich, E. I.; Li, P. Z.

TITLE: Heat-resistant glass-reinforced plastics based on epoxy resins with an increased functionality

SOURCE: Plasticheskiye massy, no. 7, 1965, 21-22.

TOPIC TAGS: glass reinforced plastic, epoxy resin, epoxy novolak resin, 6-EN resin, ENF resin, heat resistant plastic

ABSTRACT: The feasibility of using phenol-formaldehyde resin as a curing agent and a constituent of 6-EN epoxy-novolak resin to produce a binder for heat-resistant glass-reinforced plastics (GRP) was studied. The idea was to produce a binder of increased functionality capable of a higher degree of cross-linking and greater rigidity. 6-EN resin is prepared thus:

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ACCESSION NR: AP5018035

250C, and 2) the GRP based on ENF was superior in heat resistance to GRP from EDF resin and to GRP from phenolic resin. Orig. art. has: 3 figures, 1 table, and 1 formula. [SM]

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: MT

NO REF SOV: 002

OTHER: 002

ATD PRESS: 4047

Card *AR*  
3/3

YAKUBOVICH, P., prepodavatel'

The solicitude of our party inspires us. Sov. profsoiuzy 7  
no.21:16 N '59. (MIRA 12:12)

1. Brigada kommunisticheskogo truda tsekha No.3 zavoda  
"Prezer."  
(Turning--Technological innovations)

YAKUBOVICH, Fedor Fedorovich; MURASHEVA, O.I., red.; KIRJINA, Ye.I., tekhn.  
red.

[Manufacturing kvass] Proizvodstvo khlebnogo kvasa. Moskva, Pishchepromizdat, 1961. 91 p. (MIRA 14:11)  
(Kvass)

SHAKIN, I.A.; YAKUBOVICH, F.F.; ADAMSON, N.F., otv. za vypusk;  
MIKHAYLOVA, G.A., otv. za vyp.; MANVELOVA, Ye.S., tekhn.  
red.

[Malted corn extract] Kukuruzno-solodovyi ekstrakt. Mo-  
skva, Tsentr. in-t nauchno-tekhn. informatsii pishchevoi  
promyshl., 1963. 20 p. (MIA 17:3)

PROSVETOVA, G.I.; TUKAYEVA, S.A.; YAKUBOVICH, F.S.

Effectiveness of hormonal preparations in the combined treatment of Botkin's disease. Zdrav. Kazakh. 23 no.2:44-49'63.

(MIRA 16:10)

1. Iz kafedry infektsionnykh bolezney Karagandinskogo meditsinskogo instituta.

(HEPATITIS, INFECTIOUS) (ADRENOCORTICAL HORMONES)  
(ACTH)

AUTHORS: Kondrat'yev, A., Yakubovich, I., Engineers SOV/84-58-8-27/59  
TITLE: The An-10 Hydraulic System (Samolet An-10 — Gidravlicheskaya sistema)  
PERIODICAL: Grazhdanskaya aviatsiya, 1958, Nr 8, p 18 (USSR)  
ABSTRACT: The short article gives a description of the hydraulic system of the airliner in general terms. No technical data are included except the rated pressure which is 150 kg/cm<sup>2</sup>, and the wall thickness of rustless steel piping which is said to be from .65 to 1.0 mm rendering a considerable reduction of weight.

Card 1/1

KUZ'KIN, S.F.; NEHERA, V.P.; YAKUBOVICH, I.A.; ZOLIN, S.N.

Studying the mechanism of the action of polyacrylamide  
floculants. Izv. vys. ucheb. zav.; tsvet. met. 6 no. 4:34-  
43 '63. (MIRA 16:8)

1. Moskovskiy institut stali i splavov, kafedra obogashcheniya  
rud' redkikh metallov.

(Flotation--Equipment and supplies)

YAKUBOVICH, I. A.

136-12-3/18

AUTHOR: Yakubovich, I. A., Candidate of Technical Sciences.

TITLE: Flocculants for Accelerating the Thickening and Filtration of Hydrometallurgical Pulps (Flokulyanty dlya uskoreniya sgushcheniya i fil'trovaniya gidrometallurgicheskikh pul'p)

PERIODICAL: Tsvetnyye Metally, 1957, No.12, pp. 9-11 (USSR).

ABSTRACT: In this investigation, the properties of several synthetic and natural substances were studied from the aspect of the possibility and effectiveness of their use as flocculants for various hydrometallurgical pulps. Special attention was given to substances which are not scarce food products and which are cheap and plentiful. These properties are possessed by flocculants БЛ, М-42, КЛЖ, КМУ, БД, and their preparation and properties are considered in this article. Methodological details on the production and use of these flocculants are given. The following participated in the experimental work: Engineers P.I. Paradnya, V.N. Palagina, M.P. Vilyanskiy and Ye.S. Astakhov. There are 13 Russian references.

AVAILABLE: Library of Congress  
Card 1/1

S/089/60/008/06/05/021  
B006/B063 82306

21.3200

AUTHOR: Yakubovich, I. A.

TITLE: Flocculation of Slimes and Synthetic Flocculants of the  
Polyacrylamide Type

PERIODICAL: Atomnaya energiya, 1960, Vol. 8, No. 6, pp. 535-541

TEXT: The separation of hydrometallurgical slimes into the solid and liquid phases and the subsequent extraction of the disperse solid particles from the dissolved substances are of great importance in the dressing of ores and concentrates of uranium, lithium, zirconium, and other metals. The aggregation of more or less coarse and solid particles, the so-called flocculation, is brought about by special flocculants. With their action, the solid phase can be easily separated and extracted from the liquid phase. The present paper describes the methods of producing highly efficient flocculants and their properties, and gives the results of flocculation tests of aqueous, acid, and carbonate-hydrometallurgical slimes. This article is specially intended for

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Flocculation of Slimes and Synthetic  
Flocculants of the Polyacrylamide Type

S/089/60/008/06/05/021  
B006/B063 82306

specialists in the enrichment of ores, and in the hydrometallurgy of uranium and rare metals, who work in industrial laboratories, factories, and research institutes. In the introduction the author discusses the properties of a good flocculant, the dependence of flocculation on the physicochemical properties of the medium and the flocculant, the addition of flocculants to slimes (with special regard to the new flocculants ВЛ (VL)) on the basis of marine algae, КЛЖ (KLZh) on the basis of linseed cakes, M-42 (M-42) on the basis of potato pulp, etc. On examination, these new flocculants turned out to be much more efficient than conventional reagents. Laboratory tests and industrial experience have shown that the polyacrylamide flocculants developed in the USSR by the Institut vysokomolekulyarnykh soyedineniy AN SSSR (Institute of High-molecular Compounds of the AS USSR) and the Institut galurgii (Institute of Halurgy) are the best ones. The author jointly with M. P. Vilyanskiy and N. P. Paskhin devised a method for the synthesis of this flocculant which he tested at a factory in the Gor'kiy rayon together with E. A. Kuleva and R. Z. Khantsis. The synthesis of the compounds of the polyacrylamide type АМФ (AMF), for which acrylic

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Flocculation of Slimes and Synthetic  
Flocculants of the Polyacrylamide Type

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acid nitrile was used as starting material, is described in detail. The apparatus used for the production of the AMF flocculant is schematically shown in Fig. 1. Additional investigations dealt with its efficiency. Among other things, it was found that its efficiency was lowered by the presence of precipitates of metallic acid hydrates and silicic acid colloids. The effect of the addition of various flocculants to aqueous slimes (Figs. 3 and 4), carbonate slimes (Figs. 5,6), and slime sulfates (Fig. 2) are compared with one another in a series of diagrams. It is shown that the Russian flocculant AMF has practically the same effect as the American "Separan 2610" (Figs. 2,4) and is much better than other flocculants. There are 7 figures and 26 references: 12 Soviet and 4 German.

SUBMITTED: November 6, 1959

Card 3/3

ISAKORIN, B.N.; YAKUBOVICH, I.A.; ZUYEV, G.P.; KRASOV, V.G.; SMIRNOV, V.F.;  
PIVOVAROV, F.Ya.

Mix-and-settle apparatus for the extraction of uranium and rare  
metals from aqueous solutions. Atom. energ. 12 no.6:503-513 Je '62.  
(MIRA 15:6)

(Extraction apparatus)

KHAVSKIY, N.M.; YAKUBOVICH, I.A.; AGRAHAT, B.A.; KIRILLOV, O.D.; VASIL'YEV,  
L.V.

Effect of ultrasonic waves on the process of leaching hard to dis-  
solve rare metal compounds. Izv. vys. ucheb. zav.; tsvet. met. 6  
no.3:106-109 '63. (MIRA 16:9)

1. Moskovskiy institut stali i splavov, kafedra metallurgii i radio-  
aktivnykh metallov i kompleksnoy pererabotki polimetallicheskikh rud.  
(Leaching) (Metals, Rare and minor)  
(Ultrasonic waves--Industrial applications)

YAKUBOVICH I. A.

2

8/149/63/000/001/001/008  
A006/A.01

**AUTHORS:** Khan, O. A., Panteleyeva, N. F., Agranat, B. A., Belochkina, Ye. G.,  
Yakubovich, I. A., Kirillov, O. D.

**TITLE:** Experiments of using ultrasonic waves in selection of collective concentrates

**PERIODICAL:** Investiya vysshikh uchebnykh zavedeniy, Tsvetnaya metallurgiya,  
no. 1, 1963, 25 - 31

**TEXT:** The experimental investigation was carried out for the purpose of finding new effective means of selecting collective copper-molybdenum concentrates. Among others, the method of eliminating reagent coatings from surfaces of mineral particles in ultrasonic process, were studied. The effect of ultrasonic waves upon selective separation of molybdenite, chalcopyrite, pyrite and quartz was investigated with pure minerals and artificial mineral mixtures. It was found that the breakdown of reagent coatings from the surface of mineral particles was performed in an ultrasonic field above the threshold of cavitation of the liquid phase. The density of the processed pulp has a substantial effect

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B/149/63/000/001/001/008  
A006/A1C1

Experiments of using ultrasonic waves in...

upon subsequent flotation behavior of the mineral; the selection of the collective concentrate is improved during the ultrasonic processing of more diluted pulps with not over 10% content of solids; in denser pulps the possibility of breakdown of the reagent coatings from the surface of mineral particles is impaired. The time of ultrasonic processing of the pulp affects the results of breakdown of the reagent coatings from the mineral surfaces; 8 - 10 min is the most efficient time for processing. The breakdown of a fixed collector from the surfaces of pyrite and chalcopyrite in ultrasonic processing proceeds more fully; as a result the extraction of these minerals into a concentrate is reduced. Multi-stage processing of mineral mixtures by ultrasonic waves is not expedient, the process becomes more complex without increase in efficiency. A breakdown of xantogenate coatings without ultrasonic treatment, using merely filtration, was not observed. Filtration after ultrasonic treatment is not always necessary. There are 4 figures.

ASSOCIATION: Moskovskiy institut stali i splavov (Moscow Institute of Steels and Alloys) Kafedra obogasheniya rud redkikh metallov i kafedra fiziki (Department of Concentration of Rare Metal Ores and the Department of Physics)

SUBMITTED: April 18, 1962  
Card 2/2

8/089/63/014/002/010/019  
B101/1186

AUTHOR: Yakubovich, I. A.

TITLE: Decantation processes in uranium hydrometallurgy

PERIODICAL: Atomnaya energiya, v. 14, no. 2, 1963, 206 - 212

TEXT: To solve the problems arising in the investigation, planning, and industrial exploitation of the separation of soluble substances from the precipitate by decantation, equations are derived for the concentration of the resulting solution and for the efficiency of the washing process. If every decantation is carried out with fresh washing fluid, then the concentration  $C_x$  (kg/tons) of the extracted substance in the  $x$ -th step of decantation is given by  $C_x = (R_{pr}/R)^x C$ , where  $R_{pr}$  is the liquid/solid phase (L/S) ratio of the precipitate,  $R$  the L/S ratio of the pulp, and  $C$  the initial concentration of the substance to be extracted. For an  $n$ -step decantation, the efficiency  $\epsilon = [(M+1)^{n+1} - 1]/(M+1)^{n+1}$ , where  $M = (R - R_{pr})/R_{pr}$ . It is assumed that  $R$  and  $R_{pr}$  are constant in all steps. For countercurrent

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S/089/63/014/002/010/019  
B101/E186

Decantation processes in...

decantation with a washing fluid free from the substance to be extracted, the concentration in the intermediate stage  $x$  of an  $n$ -step decantation is

$C_x = C(M^{n+1-x} - 1)/(M^{n+1} - 1)$ , and  $\epsilon = (M^{n+1} - M)100\%/(M^{n+1} - 1)$ . If  $R \geq R_1$  pr  $= R_2$  pr  $= \dots = R_n$  pr, then  $C_x = C[(M^{n+1-x} - 1)/(M^n - 1)] \{ (M_1 + 1 - M)/[M_1 + (M - 1)/(M^n - 1)] \}$ , and  $\epsilon = (M^n - 1)100\%/[M^n - 1 + (M - 1)/M_1]$ , where  $M_1 = L_1 \text{ dec}/R$  pr is the washing modulus of the first step. If the washing fluid used is a reusable solution containing  $C_0$  (kg/tons) of substance to be extracted, then the following equations hold for  $R \geq R_1$  pr:

$$C_x = \frac{M^{(n+1-x)} - 1}{M^n - 1} \frac{M_1 + 1 - M}{M_1 + \frac{M - 1}{M^n - 1}} C + \left[ \frac{M^{(n+1-x)} - 1}{M^n - 1} \frac{M^{(n+1)} - M^n}{M_1(M^n - 1) + M - 1} + \frac{M^n - M^{(n+1-x)}}{M^n - 1} \right] C_0 \quad (18)$$

$$\epsilon = \frac{(M^{(n+1)} - M)C + M(M^{(n+1)} - M)C_0}{(M^{(n+1)} - 1)(C + MC_0)} 100\% \quad (19)$$

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Decantation processes in...

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For  $M = M_1$ ,  $C_0 = 0$ , the number of decantations necessary to reach a given efficiency is calculated from  $n = \{\log[(M - \epsilon)/(1 - \epsilon)] - \log M\} / \log M$ .

SUBMITTED: June 6, 1962

Card 3/3